RESPONSIVENESS SUMMARY CONCERNING THE EPA'S MARCH 19, 2003 PUBLIC NOTICE PROPOSING TO APPROVE/DISAPPROVE THE ARKANSAS 2002 303(D) LIST

Public Participation Process:

On March 19, 2003, the EPA Region 6 published a notice in the legal advertising sections of the Arkansas Democrat-Gazette and the Northwest Arkansas Times notifying the public of the availability of the Environmental Protection Agency(EPA) decisions identifying water quality limited segments and associated pollutants in Arkansas. Notice of availability was also published in the Federal Register, Vol. 68, Num. 53, pages 13310-13311 on March 19, 2003. Copies of documents which explain the rationale for the EPA's decisions were provided at the EPA Region 6 public website http://www.epa.gov/earth1r6/6wq/artmdl.htm and were available on request. The public comment period closed on April 18, 2003.

Summary of Public Participation:

One person contacted the EPA Region 6 offices to obtain a copy of the list of proposed additions to Arkansas 2002303(d) list.

Matthew Joy
E-mail request

The following persons or entities provided written comments during the public comment period:

1. Marcus C. Devine, Director
   Arkansas Department of Environmental Quality

2. Mike Beebe
   Attorney General, State of Arkansas

3. John Paul Hammerschmidt, Chairman
   Northwest Arkansas Council

4. Ed Clifford, President/CEO
   Bentonville/Bella Vista Chamber of Commerce

5. J.W. "Bill" Ramsey
   Fayetteville Chamber of Commerce

6. Dan Cody, Mayor
   City of Fayetteville

7. Steve Womack, Mayor
   City of Rogers

8. Jerre M. Van Hoose, Mayor
City of Springdale

9. Larry S. Lloyd, P.E., Chief Operating Officer
Beaver Water District

10. Frederic P. Andes, Coordinator
Federal Water Quality Coalition

11. Anna Slawsky
Citizen

12. Hank Bates
McMath, Woods, P.A.

13. Nancy DeLamar, Vice President and State Director
The Nature Conservancy of Arkansas

14. Robert Bays
Citizen

Agency's Specific Responses to Comments Made by the Public:

Comment: *Several commenters expressed support of the EPA action to include additional waters on the Arkansas 2002 303(d) list.*

"I am writing to express my support for the listing of impaired streams and lakes in Arkansas published in the March 9, 2003, Federal Register." This comment was specific to mercury listings. Jerry Williams.

"Thank you for requiring the State of Arkansas to add the new streams to the 303(d) list. Your action, hopefully, will require State officials to provide leadership to an effort to clean up Arkansas' waters." Robert Bays.

"We would like to commend both the EPA and the Arkansas Department of Environmental Quality for their continued efforts to improve the waterways of the state." Nancy DeLamar.

Comment: *The EPA Must Base its Listing Decisions on Approved State Standards. "Although we have serious due process concerns about the use of general, or narrative, standards, in making impairment determinations, Arkansas has adopted a narrative water quality standard and has clearly identified how attainment with that standard is to be measured. The EPA has approved the Arkansas water quality standards as sufficient to protect water quality in compliance with the CWA. See www.epa.gov/waterscience/standards/states/. The EPA's approval was not contingent on a particular interpretation of that standard. Thus, the EPA must base its evaluation of the List on the state's approved narrative water quality standard, including the method the state has identified to determine attainment of that standard. The EPA cannot now substitute its interpretation in place of the state's, and may not disapprove a state listing*

decision based on a previously approved state standard without complying with the rule making procedures contained in the CWA.

In light of its proposal to add the five waters in question to the List, it appears that the EPA believes that the Arkansas water quality standards, as applied to fish consumption concerns due to mercury in fish tissue, are insufficient under the Act. The appropriate action in that situation, however, is not to list additional waters contrary to state law, but to properly revise the standards in accordance with the procedures set forth in the Act. When the state's water quality standards were promulgated, the EPA had the opportunity to specify any changes necessary to comply with the Act. Indeed, the EPA retains the ability to revise the Arkansas standards at any time, if necessary to comply with the Act:

> *(3) if the Administrator, within sixty days after the date of submission of the revised or new standard, determines that such standard meets the requirements of this chapter, such standard shall thereafter be the water quality standard for the applicable waters of that State. If the Administrator determines that any such revised or new standard is not consistent with the applicable requirement of this chapter, he shall not later than the ninetieth day after the date of submission of such standard notify the State and specify the changes to meet such requirements. If such changes are not adopted by the State within ninety days after the date of notification, the Administrator shall promulgate such standard pursuant to paragraph (4) of this subsection.*
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> *(4) The Administrator shall promptly prepare and publish proposed regulations setting forth a revised or new water quality standard for the navigable waters involved—*
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> *(A) if a revised or new water quality standard is submitted by such State under paragraph (3) of this subsection for such waters is determined by the Administrator not to be consistent with the applicable requirements of this chapter, or*
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> *(B) in any case where the Administrator determines that a revised or new standard is necessary to meet the requirements of this chapter."*

Response: Arkansas has adopted a narrative water quality criterion to protect human health. See Regulation 2, Section 2.508. This narrative water quality criterion provides: "Toxic substances shall not be present in receiving waters, after mixing, in such quantities as to be toxic to human, animal, plant or aquatic life or to interfere with the normal propagation, growth and survival of the indigenous aquatic biota."

The Arkansas Department of Health (ADH), in part, protects the public from violations of this narrative criterion by issuing fish consumption advisories according to state developed and approved methodologies. At average concentrations exceeding 1.0 ppm, the ADH will recommend limited meals or no consumption for pregnant or breast-feeding women and children under seven and limited consumption for the general population.

First, contrary to the commenter's assertions, the EPA is not developing a federal water quality standard to supersede Arkansas' standard, but rather is interpreting

a water quality standard that has been duly adopted by the State and certified by the Attorney General. The state's direction that "No substances shall be present in waters of the state ... that alone or in combination significantly increase health risks due to exposure to the substances or consumption of contaminated fish or aquatic life" signifies the state's clear intent that this criterion be interpreted as necessary in order to be applied in the State's water quality based approach to pollution control (e.g., through the NPDES permitting process, the TMDL program or other applicable state programs). Thus, far from usurping the state's responsibility, the EPA's act of interpreting the narrative criterion gives significance to the state's own regulatory structure.

The EPA further notes that the federal water quality standard regulations at 40 C.F.R. Part 131 requires adoption of water quality criteria that protect designated uses. Such criteria must be based on sound scientific rationale, must contain sufficient parameters to protect the designated use, and may be expressed in either narrative or numeric form. In adopting water quality criteria, States, Territories and authorized Tribes are expected to establish numerical values based on 304(a) criteria, 304(a) criteria modified to reflect site specific conditions, or other scientifically defensible methods, or establish narrative criteria where numerical criteria cannot be determined, or to supplement narrative criteria. See 40 C.F.R. § 131.11. Narrative criteria are descriptions of the conditions of the water body necessary to attain and maintain its designated use, while numeric criteria are values expressed as levels, concentrations, toxicity units or other measures that quantitatively define the permissible level of protection. To adequately protect designated uses, the EPA believes water quality standards should include both narrative and numeric water quality criteria. In certain circumstances it is possible that numeric water quality criteria can be met and the designated uses still not be achieved. For example, factors such as food web structure, the concentration of dissolved organic carbon in the ambient water, and accumulations in the sediment may affect uptake of mercury into fish flesh on a site-specific basis. In these circumstances, the EPA recommends States and authorized Tribes translate the applicable narrative criteria on a site-specific basis, or if necessary adopt site-specific numeric criteria, to protect designated uses. However, ultimately, TMDLs should be established to implement the applicable designated uses and criteria.

Second, as noted above, the EPA's act of interpreting the State's narrative criterion ensures that the level of protection established by the State for these lakes, through the adoption of the designated use of fishing will be achieved. Accordingly, this is not a situation where the EPA has, or should have, determined that Arkansas' current water quality standards are inconsistent with the Clean Water Act. To the contrary, the EPA has already determined that the Arkansas standards met the requirements of the CWA and the implementing federal regulations when The EPA approved Arkansas' narrative criterion which states: "Toxic substances shall not be present in receiving waters, after mixing, in such quantities as to be toxic to human, animal, plant or aquatic life or to interfere with the normal propagation, growth and survival of the indigenous aquatic biota." The EPA is interpreting Arkansas' duly adopted narrative criterion in a

way that ensures that the designated uses are protected as required by the Clean Water Act.

As discussed in the EPA guidance issued October 24, 2000, section 101(a)(2)of the CWA establishes as a national goal "water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and recreation in and on the water, wherever attainable." These are commonly referred to as the "fishable/swimable" goals of the Act. The EPA interprets "fishable" uses under section 101(a) of the CWA to include designated uses providing for the protection of aquatic communities and human health related to consumption of fish and shellfish. In other words, the EPA views "fishable" to mean that not only can fish and shellfish thrive in a water body, but when caught, they can also be safely eaten by humans.

The information available for these five waters, which includes a fish or shellfish consumption advisory, a NSSP [National Shellfish Sanitation Program] classification, and the supporting data, demonstrates non-attainment of a section 101(a) "fishable" use because:

1. the advisory is based on fish and shellfish tissue data,
2. a lower than "Approved" NSSP classification is based on water column and shellfish tissue data (and this is not a precautionary "Prohibited" classification or the state water quality standard does not identify lower than "Approved" as attainment of the standard),
3. the data are collected from the specific water body in question and
4. the risk assessment parameters (e.g., toxicity, risk level, exposure duration and consumption rate) of the advisory or classification are cumulatively equal to or less protective than those in the State, Territory, or authorized Tribal water quality standards.

This applies to all pollutants that constitute potential risks to human health, regardless of the source of the pollutant.

Comment: *The commenter expressed concern that the listings of streams for mercury did not recognize the problem of mercury as associated with nonpoint pollution and, in particular, stream sedimentation.*

Response: The listings for mercury as proposed by the EPA are based on levels of mercury in fish tissue and fish consumption advisories issued by the State of Arkansas. Fish tissue accumulations are representative of the availability of mercury in the environment, but do not address sources. Fish can be exposed to mercury from many sources and these listings are not source specific. In the development of a TMDL for mercury for these listed waters, the role of different sources including the erosional contribution will be evaluated and considered when setting TMDL load allocations.

Comment: *Several commenters remarked on the EPA's use of numeric nutrient water quality data and the absence of information regarding algal densities or nuisance aquatic vegetation.*

Response: Arkansas' narrative criterion for nutrients reads: "Materials stimulating algal growth shall not be present in concentrations sufficient to cause objectionable algal densities or other nuisance aquatic vegetation. As a guideline, total phosphorus shall not exceed 100 ug/l (0.1 mg/l) in streams or 50 ug/l (0.05 mg/l) in lakes and reservoirs except in water highly laden with natural silts ... or in other waters where it can be demonstrated that algal production will not interfere with or adversely affect designated uses and/or fish and wildlife propagation."

The EPA believes that the Arkansas water quality criterion, quoted above, contemplates the use of numeric phosphorus concentrations by providing specific numeric guidelines of 100ug/l and 50 ug/l. It is the EPA's interpretation that the narrative establishes a two-part test for nutrient impairment. If concentrations are demonstrated to be in excess of the guidelines then two exceptions are provided under which the guidelines are not applicable: (1) Where waters are naturally silt laden and; (2) where there is a demonstration that algal production does not interfere with or adversely affect designated uses.

In each case where the EPA has determined it is appropriate to add waters to the 303(d) list, phosphorus levels are many times greater than the 100 ug/l guideline. However, the EPA's decision to list these waters was not based solely on the high water column concentrations of phosphorus. For each water, the EPA reviewed all existing and readily available data to determine whether nutrient impacts that may interfere with or adversely affect designated uses were present. The EPA made a determination that it is appropriate to list waters under this narrative where phosphorus concentrations are markedly elevated and data or information supports that algal production interfered with or adversely affected the use. Additional data and information to support this interpretation has been added to our final decision document.

Comment: *The EPA's use of Ozark Highlands Ecoregion reference stream values when evaluating waters for nutrients is inappropriate and does not show violations of water quality standards.*

Response: The EPA used an ecoregion approach as an additional relative measure of the magnitude of the total phosphorus levels in these waters. The EPA did not mean to imply that these comparisons are definitive and constitute exceedances of the Arkansas narrative nutrient criterion. The EPA believes the ecoregion phosphorus concentration is relevant as an indication of the impact that some of the sources have on concentrations of total phosphorus. For example, in Osage Creek in the Kings River watershed, the mean phosphorus concentration of 47 ug/l at a water quality station above the town of Berryville is below the Ozark Highlands ecoregion reference value of 50 ug/l. The mean phosphorus headwater concentration in Osage Creek below the next station downstream from the Berryville WWTP is 1710 ug/l; a 34 fold increase above the upstream concentration. The EPA believes that these strikingly elevated concentrations, when compared with the Ozark ecoregion guideline, and combined with documented instream impairments in downstream waters provide valuable information when evaluating these waters.

Comment: *The EPA's consideration of TMDL studies proposed or under way in downstream river segments located in Oklahoma and Missouri does not in itself require listing.*

Response: EPA wants to clarify that it does not rely solely on the TMDL studies downstream to list the Arkansas waters in question. The EPA did consider that these waters were listed as impaired in the adjacent jurisdiction. The EPA's decision to list these waters is further supported by the existing and readily available water quality-related data and information from independent findings in adjacent states that waters directly hydrologically connected to these Arkansas waters are impaired for the same pollutant of concern. These studies contain data directly related to algal densities and aquatic vegetation attributable to elevated phosphorus loadings. Each of the listings evaluated are for waters in the same watershed as the Arkansas waters and have similar characteristics and land use.

Comment: *The EPA's decision document references comments submitted to ADEQ and did not reference ADEQ's response to those comments or the rationale ADEQ developed for analyzing waters for its proposed 303(d) list.*

Response: Thank you for your response. The ADEQ response to comments were considered and are a part of the EPA's administrative record and copies are avaialble from ADEQ.

Comment: *The EPA's proposed decision will have a negative impact on cooperative negotiations currently underway between the State of Arkansas and the States of Oklahoma and Missouri.*

Response: EPA believes that a 303(d) listing should have no direct impact on the negotiations nor would it impose "unilateral regulatory" actions. A 303(d) listing is simply the first step in acknowledging that there may be a problem and requires a detailed evaluation of the waterbody of concern to determine what appropriate steps may need to be taken to meet water quality standards in these waters. Impairments such as phosphorus may manifest themselves far afield from the actual loadings and may cause impacts that extend across geopolitical boundaries. Thus, cooperative negotiations are necessary in such situations. And, if a TMDL is developed it is not self implementing. It can only be implemented through additional action taken by the state with jurisdictional authority. Certainly, the implementation could be through such actions and controls that are negotiated by your State. Further, these listings may be removed not only through establishment of TMDLs, but through other possible mechanisms that may be put in place consistent with section 130.7(b)(1)(i-iii) of the TMDL regulations. EPA is willing to support a cooperative resolution of these issues through solutions negotiated by Arkansas, Oklahoma, and Missouri. In fact, EPA encourages these negotiations and would look forward to the opportunity of working with Arkansas and other involved parties to reach an equitable resolution to these environmental concerns.

Comment: *Commenters expressed concern over proposed water quality standards in Oklahoma and that such water quality limits (referring to the 0.037 mg/l phosphorus limit proposed by the state of Oklahoma) are arbitrary, lacking consideration of best*

practicable wastewater treatment technology or appropriate cost-benefit analysis. (i.e. cost to customers for more stringent effluent limits can be clearly linked to the protection of water quality)

Response: The EPA has not taken final action on Oklahoma's proposed total phosphorus criterion, therefore this criterion is not currently in place and was not considered as part of this decision process.

Comment: *It is not believed that the consent decree in Sierra Club v. EPA demands the addition of the Illinois River to the Arkansas 303(d) list.*

Response: The consent decree in Sierra Club v. EPA does not demand the addition of any waters to the Arkansas 303(d) list. It only requires that the EPA evaluate the status of waters listed in Attachments A and B of the consent decree and provide a waterbody-specific rationale for any waters not included on the final EPA-approved list.. The Illinois River is included in Attachment A with nutrients as the pollutant of concern. Regardless of the consent decree**,** the EPA is required under section 303(d) to assure that the state's 303(d) list is complete.

Comment: *Several commenters dispute the fact that stream segments in the Illinois River basin (Spring Creek, Osage Creek, and Illinois River) show long-term increasing trends in phosphorus concentrations.*

Response: Arkansas Water Resource Center's publication titled *"Illinois River Phosphorus Sampling Results and Mass Balance Computation*" states that concentrations are increasing. In addition, ADEQ's attachment A to its January 16, 2003**,** response letter to Miguel I. Flores (Recent Total Phosphorus Loads in the Illinois River in Arkansas compared to Loads in 1980-93 by Martin Maner, P.E.)ADEQ draws similar conclusions.

Comment: *The EPA's proposal to list the four stream segments (Illinois River, Osage Creek (two segments), and Spring Creek) in the Illinois River basin fails to take into consideration significant changes in condition; i.e. new approaches to sludge management, modifications to WWTP, passage of legislation establishing a program to regulate the use of poultry litter and other fertilizer in nutrient surplus areas.*

Response: The EPA is cognizant of new sludge management approaches, modifications to WWTPs and the adoption of a new program by the state legislature to regulate the use of poultry litter and other fertilizer in nutrient surplus areas. Any immediate reductions in concentrations resulting from implementation of these actions should be reflected in subsequent monitoring data collected by ADEQ. However, most of these actions will not result in immediate reductions of total phosphorus and may take years to produce demonstrable results. The EPA's action taken today is based on current water quality data and based on this information we cannot project the possible future impact of these actions. The EPA will continue to evaluate new available data for future listing decisions.

Comment: *"Beaver Lake and its tributaries currently may not be in a crisis situation such as that perceived by the State of Oklahoma in regards to the Illinois River and by*

the State of Missouri in regards to the Kings River which flows into Table Rock Lake. Nonetheless, the same nutrient and sediment loading concerns apply to Beaver Lake and its tributaries. In fact, as attention and potential additional regulatory controls are focused on the Illinois River, Kings River, and other listed waterbodies in Northwest Arkansas, the danger exists that pollution sources will simply move from those watersheds to the Beaver Lake watershed. Therefore, we respectfully request that Region 6 ensure that a thorough and *ongoing water quality monitoring program of Beaver Lake and its tributaries is conducted and that all relevant water quality data is analyzed and acted upon in a timely manner. At a minimum, the EPA should expend the same level of effort in protecting or improving water quality in Beaver Lake and its tributaries as it does for the Illinois River and the Kings River. In addition, we ask that Region 6 keep in mind the potential direct and indirect impacts that regulatory actions taken in the other watersheds of Northwest Arkansas may have upon the Beaver Lake watershed.*"

Response: Responsibility for water quality monitoring is a state function. The EPA will discuss monitoring for Beaver Lake with ADEQ and will encourage future monitoring activities to assess any impacts to Beaver Lake and to determine the impairment status of the lake for future 303(d) lists. The EPA is supporting through grants several monitoring studies to evaluate the West Fork of the White River. These projects include establishing a new water quality station on the West Fork of the White River at a location selected by a joint committee of the ASWCC, ADEQ and AWRC. This station is coordinated with a USGS gauging station at the same location. This station will be instrumented to collect samples at sufficient intervals across the hydrograph to accurately estimate the flux of total suspended solids, nitrogen and phosphorus in the West Fork of the White River. In addition the EPA has approved funding with section 319 funds a project to provide a thorough biological assessment of the West Fork of the White River (WF-WR) as part of the West Fork watershed assessment being performed by the EPD of the ADEQ. This work will be done in conjunction with geomorphological surveys to determine baseline biological conditions of the stream.

Comment: *The EPA should reconsider its decision not to include Smackover Creek on Arkansas' 2002 303(d) list.*

Response: The EPA appreciates the commenter's concern that Smackover Creek should be included on the Arkansas 2002 303(d) list**,** but we do not have sufficient data at this time to support a listing. Site specific minerals standards (Chlorides: 250 mg/l, Sulfate: 30 mg/l and TDS: 500 mg/l) have been set for Smackover Creek (see section 2.511 of Regulation 2). One sampling analysis was submitted along with this comment. Arkansas Regulation 2 states these site specific standards must not be exceeded more than once in ten samples collected over a 360 day period with a minimum of 30 days between sampling events. Although the data provided exceeds the chloride standard, it is only a single sampling event and therefore does not meet the requirements for listing in the Arkansas assessment methodology outlined in Regulation 2. The only data available, station OUA 27, above the area of concern does not violate these minerals standards. The EPA will bring this reach of Smackover Creek to the attention of ADEQ and will recommend that a water quality station be established to evaluate water quality impacts at this location.